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90 and in gas communication with the variable gas holding volume 96. The inlet 104 and outlet 106 are disposed to define a flow path therebetween for bias gas within the primary conduit 88. A one-way valve 108, for example a mushroom valve, is located at the gas outlet 106 and arranged to allow the only the venting of gas from the primary conduit 88. This valve 108 is adapted to open only when pressure within the primary conduit 88 reaches a predetermined and possibly adjustable level. In this way a desired average airway pressure can be established by the HFO ventilator 86. A further one-way valve 110 is located within the primary conduit 88 to prevent gas passing from the variable volume 96 and through the patient opening 90 as the piston 98 is moved to reduce the volume of the variable volume 96. A secondary conduit 112 is provided with an opening 114 in the primary conduit 88 through which gas may be directed to intersect the bias flow path and move towards the patient opening 90. A gas pulse generator 116 has a controllable on/off valve 118 which is switched under the control of the control signal generator 102 to alternately allow and prevent passage of gas from a pressurized source of an additional gas (not shown) which connects to an inlet 120 of the gas pulse generator 116. Also provided within the gas pulse generator 116, in-line between the inlet 120 and the valve 118, is a humidifier 122 which conditions the additional gas before it is supplied to the primary conduit 88.

IN THE CLAIMS

Claim 1 has been amended as follows:

- B2
1. (Amended) A high-frequency oscillator (HFO) ventilator comprising;

a first gas conduit having an opening adapted for gas connection with a patient's airways and a bias gas flow inlet and a bias flow outlet disposed to define therebetween a flow path for a bias gas within the first conduit;

an oscillator for inducing pressure oscillations in gas within the first conduit to move said gas along a path intersecting the flow path for a bias gas alternately into and out of the opening at a predetermined high-frequency, said oscillator comprising an arrangement for alternately introducing a volume of additional gas, in addition to said bias_gas into and withdrawing at least the volume of gas from the first gas conduit to induce the pressure oscillations.

B²

Applicants also herewith submit a "clean" copy of claim 2, embodying the handwritten material initialed and dated by the inventors. (THIS IS NOT AN AMENDMENT OF CLAIM 2 SINCE THE HANDWRITTEN CHANGES CONSTITUTE "ORIGINAL" LANGUAGE OF CLAIM 2 AS FILED.)

2. An HFO ventilator as claimed in claim 1 wherein said arrangement in the oscillator is disposed to introduce the volume of additional gas into the first gas conduit to intersect the bias flow path at a location proximal the opening.